#15
11/6/03
A.W

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John Quernemoen

Serial No.: 09/515,310 Examiner: Dodds, Harold E.

Filed: February 29, 2000 Group Art Unit: 2177

For: SIZING SERVERS FOR DATABASE MANAGEMENT SYSTEMS VIA USER DEFINED WORKLOADS

Docket No.: RA-5244 (1028.1124101)

DECLARATION UNDER RULE 1.131

Mail Stop Non-Fee Amendment
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

CERTIFICATE UNDER 37 C.F.R. 1.8: I hereby certify that this correspondence is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450, on this 27th day of October, 2003.

By: _____
Brian N. Tufte

Dear Sir:

I, John M. Quernemoen, as the sole inventor of the claimed inventions of the above-identified application, declare as follows:

This Declaration is to establish completion of the inventions in this application in the United States, at a date prior to April 30, 1999, which is the effective filing date of the Yang et al. patent (U.S. Patent No. 6,542,845).

Facts and Documentary Evidence

All work on the inventions included in the above-identified application was completed in

the United States.

The inventions included in this application were completed prior to April 30, 1999. As evidence of this, attached hereto as Exhibit 1 is a true and accurate copy of Unisys Invention Disclosure Number "RA-5244", with only the dates removed. Prior to April 30, 1999, I met with Mr. Mark Burns. As I understand it, Mr. Burns was employed by Unisys and was functioning as a patent liaison between the Unisys Law Department and the Engineering Groups. I explained to Mr. Burns the inventions included in the above-identified application, and some time thereafter, Mr. Burns prepared the attached Unisys Invention Disclosure Number "RA-5244" entitled "Sizing Servers for Database Management Systems via User Defined Workloads". From the date identified on the first page of Unisys Invention Disclosure Number "RA-5244" (which has been removed in the attached copy), Mr. Burns prepared Unisys Invention Disclosure Number "RA-5244" prior to April 30, 1999.

All statements made herein are of my own knowledge and are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

Date: October 23, 2003

John M. Quernemoen

UNISYS CORPORATION

INVENTION DISCLOSURE

Disclosure Identifier: RA-5244

Title of Invention: Sizing Servers for Database Management Systems via User Defined Workloads

Full Name of Inventor(s): John M. Quernemoen

Telephone Numbers: x 5933

Location: Roseville

Organization Name: System Analysis, Modeling and Measurement

Mail Station: 4683

Related Disclosures: RA-5246

Project: Enterprise NT Sizer

Prepared by: Mark Burns

Date:

Brief Description of Invention:

A tool to estimate system configuration requirements for Online Transaction Processing (OLTP) applications and workloads. These workloads may be pre-defined or user-defined. After a workload is chosen, the tool calculates a system configuration based on user input.

Background Information:

The Unisys Enterprise NT Sizer provides system configuration recommendations for Windows NT Database Server systems. The recommendations are based on customer workload requirements for applications running relational database management systems (DBMS) in a client/server computing environment. The Sizer is a Windows application designed to offer a user-friendly interface to accomplish complex tasks.

Analysts who assist customers will use this tool in selecting an NT system configuration that meets the customers' DBMS application and workload needs. Thus, it is designed to interact with the user to define the database, the application, the application workload, and growth.

Description of the Invention:

With the OLTP sizing feature of the Enterprise NT sizer, the user may select a TPC-C workload, or the user may define his own workload. For the TPC-C workloads, one may also compare the resulting tpmC estimates to those of existing systems.

Transactions are needed to complete database inputs, updates, deletes, etc. A transaction consists of one or more Structured Query Language (SQL) statements that are preceded by a Begin Transaction statement and followed by a Commit Transaction statement. The four SQL statements that are most common and most important in determining system performance and mass storage requirements are input, select, update, and delete.

To accurately assess database server requirements, the content of the SQL statements must be defined. As an analogy, to calculate the cost of a particular car, the purchaser needs to specify the components desired on that car. For example, the type of transmission, the engine size, and the interior style are equipment variables that help contribute to the overall cost of the car.

One method of obtaining required specifications is to have the user define their projected SQL statements. In this method, the user must first define which SQL statements will comprise their transactions. The user must then input the parameters of the projected SQL statements. Parameters include such information as size of the database table, number of items in the table, number of rows returned in a select statement and number of inserts between transaction commits. Many other parameters can be specified to define the different SQL statements. The statement definitions along with the parameters make up the OLTP workload that is predicted of the user's database system.

In addition to the user input stated above, the user must also select the hardware and software components of the potential system. The user selects the database management system, its accompanying software, and the hardware to support it from a list provided by this tool. The user is required to enter a maximum desired processor utilization level, but is given a recommended threshold to follow.

Once this information has been provided, the Enterprise NT Sizer has the capability to calculate database size requirements (using the algorithm described in RA-5264) and system configuration requirements. The defined workload can also be applied to other management systems and other hardware designs. The tool calculates system configuration requirements through mathematical functions derived from regression analyses along fitted data curves. Each data curve was derived from measurements taken on the various systems covered in this tool. SQL statement parameters were varied to obtain a resource usage range for that SQL. This was repeated on different database management systems to obtain a plot for resource usage. The use of curve fitting through statistical regression analysis allows the tool to calculate resource usage values that coincide with the user-inputted parameters.

Often times, however, the user will know neither the transaction makeup nor the composition of the SQL statements. In these instances, the user can substitute a standard benchmark, such as TPC-C, for the application and workload. The tool will then estimate system requirements based on this workload definition.

Purpose of the Invention:

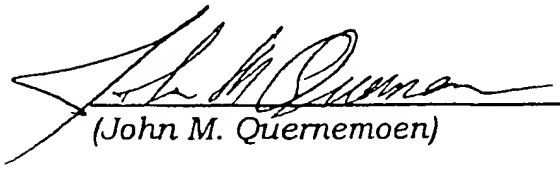
The purpose of this tool is to provide potential purchasers of database servers a means of calculating system size requirements to meet their workload and performance requirements. This tool allows the user to compare systems based on a standard TPC-C workload or a custom-designed workload. The purchaser can "design" a system that best suits his application by defining the anticipated

SQL transactions. This provides a realistic measurement of size and performance requirements on several database management systems.

What is new or different?

In the past, estimation tools used composite transactions comprised of model SQL statements. The OLTP sizing feature of the Enterprise NT Sizer is unique because it calculates system requirements based on individual components of transactions. This tool breaks down the transactions into individual components, or parameters. The user now has the ability to specifically define the parameters that will be used in their transactions. This results in a more accurate calculation of the necessary system requirements.

Signatures:



(John M. Quernemoen) *(Date)*

Witnesses - Read and understood by me this date:

(Supervisor) *(Date)*

(Witness) *(Date)*